

METHOD OF DECREASING CHARGING EFFECTS IN
OXIDE-NITRIDE-OXIDE (ONO) MEMORY ARRAYS

Yakov Roizin
Efraim Aloni
Micha Gutman
Menachem Vofsy
Avi Ben-Gigi

ABSTRACT

A pre-metal dielectric structure of a SONOS memory structure includes a UV light-absorbing film, which prevents the ONO structure from being electronically charged in response to UV irradiation. In one embodiment, the pre-metal dielectric structure includes a first pre-metal dielectric layer located over the SONOS memory structure, a light-absorbing structure located over the first pre-metal dielectric layer, and a second pre-metal dielectric layer located over the light-absorbing structure. The light-absorbing structure can be a continuous polysilicon or amorphous silicon layer. Alternately, the light-absorbing structure can include one or more patterned polysilicon layers. In another embodiment, the SONOS transistors include UV light absorbing polysilicon spacers.